

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 78.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030075**Date Inspected:** 25-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Steward Machine Co.**Location:** Birmingham, AL**CWI Name:** Fred Hudson (Cert. #01061501)**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** E2 Shear Key Anchorages**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Fritz Belford was present on the date and times noted above in order to observe the fabrication and Quality Control (QC) functions performed by Steward Machine Company for the E2 Shear Key Anchorages for the SFOBB project. Material Test Reports (MTRs) for all materials used have been reviewed and approved by others at the XKT shop in Vallejo California prior to shipping to Steward Machine Company. The following items were observed:

**STEWARD MACHINE - PLANT 1:**

The QA performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. Work performed at the Steward Machine shop as noted below:

**Welder John Ray (#469):**

The welder was observed rewelding the T3 round bar to the R3 plates to correct the positioning of the round bar utilizing Welding Procedure Specification (WPS) P2-W101-B for Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 2F position. The welding parameters were observed adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson (Cert. #01061501) who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 27.5volts/250amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm.

**S4B Assembly:**

The assembly was mounted on CNC #231 for milling of the assembly bottom side and enlargement of the cable troughs to 87 x 146 as required by contract drawings.

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### S3B Assembly:

The assembly was observed being fitted with the S3B-e3 plate. After the plate was fitted the root pass for the f3 plate was welded on side A and tested with MPT by the QC Inspector. The welding was performed by Ben Rhodes utilizing WPS P2-W128-b for FCAW-G in the 1G position. The welding parameters were observed adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson (Cert. #01061501) who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 30volts/300amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm.

### S4C Assembly:

The assembly was mounted on CNC #230 for milling of side A.

### S3C Assembly:

Welders John Ray (#469) and Ben Rhodes #481 were observed welding the assembly side B cover passes utilizing Welding Procedure Specification (WPS) P2-W126-B for Flux Core Arc Welding-Gas Shielded (FCAW-G) in the 1G position. The welding parameters were observed adjusted and monitored by Certified Welding Inspector (CWI) Fred Hudson (Cert. #01061501) who was onsite with the WPS as required by contract documents. The welding parameters were measured to be 30volts/300amps using 1/16" Class E70T-1 filler and 100% CO2 at 40cfm. The assembly as noted above includes plates S3C-e4, S3C-f4, S3C-g4, S3C-d4, S3C-c4, S3C-h4, S3C-b4 & S3C-a4.

The following plates were noted staged throughout the shop in various stages of processing.

Bay 4 & 5- Plates:

S3C-e3. Milling complete.

S4C-e4. Milling complete.

### COMPONENT RELEASES.

None

### NON-DESTRUCTIVE TESTING (NDT).

S3B Assembly Visual Testing (VT) and Magnetic Particle Testing (MPT):

- VT & MPT of plate S3B-f3 root pass on Side A was acceptable. (See TL-6028 for more information.)

The QC Inspector was observed performing 100% Magnetic Particle Testing (MPT) and accepting of items noted above prior to QA Inspector's verification MPT.

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### Summary of Conversations:

As required for scope of work.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas (916) 764 - 6027, who represents the Office of Structural Materials for your project.

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**Inspected By:** Belford,Fritz

Quality Assurance Inspector

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**Reviewed By:** Foerder,Mike

QA Reviewer